

Amendments to Claims

1. **(Previously Amended)** A fuel cell stack having:  
a plurality of fuel cells disposed between current-collecting end plates and  
having water therein; and  
at least one reactant gas manifold;  
5 characterized by the improvement comprising:  
each said at least one reactant gas manifold comprising either (a) a single  
wall, with a VIP or GFP disposed inside or outside said single wall, or (b) a double  
wall forming a chamber, said chamber containing a vacuum, a low thermal  
conductivity gas, a VIP or a GDF; and  
10 an insulator panel disposed on an external surface of each of said end plates,  
each insulator panel comprising either (a) a hollow chamber containing a vacuum or  
a low thermal conductivity gas, or (b) a VIP, or (c) a GFP.

2. **(Currently Amended)** A fuel cell stack according to claim 1 wherein:  
said fuel cell stack has a plurality of said reactant gas manifolds; and  
the insulation provided by said manifolds and said insulator panels  
~~correspond with the mass-times heat capacity, external surface area and water~~  
5 ~~inventory of said fuel cell stack~~ is sufficient so that the water in said stack is not  
totally frozen when said fuel cell stack is inoperative in an ambient environment for  
greater than fifty minus-degree-days.

3. **(Currently Amended)** A fuel cell stack according to claim 1 wherein:  
said fuel cell stack has a plurality of said reactant gas manifolds; and  
the insulation provided by said manifolds and said insulator panels  
~~correspond with the mass-times heat capacity, external surface area and water~~  
5 ~~inventory of said fuel cell stack~~ is sufficient so that the water in said stack is not

totally frozen when said fuel cell stack is inoperative in an ambient environment for about 100 minus-degree-days.

4. **(Currently Amended)** A fuel cell stack according to claim 1 wherein:  
said fuel cell stack has a plurality of said reactant gas manifolds; and  
the insulation provided by said manifolds and said insulator panels

~~correspond with the mass-times-heat capacity, external surface area and water~~  
5 ~~inventory of said fuel cell stack~~ is sufficient so that the water in said stack is not  
totally frozen when said fuel cell stack is inoperative in an ambient environment for  
about 150 minus-degree-days.

5. **(Original)** A fuel cell stack comprising:  
a plurality of fuel cells disposed between current-collecting end plates; and  
an insulator panel disposed on an external surface of each of said end plates,  
each insulator panel comprising either (a) a hollow chamber containing a vacuum or  
5 a low thermal conductivity gas, or (b) a VIP, or (c) a GFP.

6. **(Original)** A fuel cell stack according to claim 5 wherein said insulator  
panels comprise either (a) a VIP or (b) a GFP with an external film of (c) plastic or  
(d) resin/fiberglass composite for enhanced structural integrity.

7. **(Original)** An insulated reactant gas manifold for a fuel cell stack  
comprising either (a) a single wall, with a VIP or GFP disposed inside or outside said  
single wall, or (b) a double wall forming a chamber, said chamber containing a  
vacuum, a low thermal conductivity gas, a VIP or a GFP.

8. **(Original)** A manifold according to claim 7 wherein said double wall  
forming a chamber comprises a layer of either (c) plastic or (d) resin/fiberglass  
composite on the surfaces of (e) a VIP or (f) a GFP for enhanced structural integrity.